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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,048	04/01/2005	Haruyoshi Toyoda	046124-5375	5519
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EXAMINER				
SOHN, SEUNG C				
ART UNIT		PAPER NUMBER		
2878				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,048

Applicant(s)

TOYODA ET AL.

Examiner

SEUNG C. SOHN

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 20050920/20060623/20070302
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1-2 and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Blum et al. (WO 95/34800).***

Regarding claims 1 and 11, Blum et al. shows in Fig. 13 a phase distribution measuring apparatus, comprising a fly-eye lens (2) composed of a plurality of condensing lenses arranged in a matrix on a plane; an image pickup device (10) which includes a plurality of light receiving elements arranged in a matrix on a light receiving surface, and is arranged so that the light receiving surface becomes parallel to the plane at a distance corresponding to the focal length of the condensing lenses (Page 16, lines 6-25 and Page 29, lines 17- Page 33, line 33); and a phase calculating device (12) that calculates a phase distribution of light made incident on the fly- eye lens (2) from data outputted from the image pickup device, wherein the phase calculating device comprises: a center position calculation means for calculating bright spot center positions at which the luminance on the light receiving surface becomes maximum based on luminance data detected by each light receiving element; and a centroid

position calculation means for calculating luminance centroid positions in centroid operating regions centered on the bright spot center positions.

Regarding claim 2, Blum et al. disclose that the phase calculating device further comprises a bright spot area calculation means for calculating areas with luminances exceeding a predetermined threshold in predetermined regions centered on the luminance center positions, and the centroid operating regions are set so as to occupy areas exceeding the areas calculated by the bright spot area calculation means.

Regarding claims 8-10, Blum et al. disclose that the phase calculating device further comprises a luminance moment calculation means for calculating the moments of luminances in the centroid operating regions, the center position calculation means and the luminance moment calculation means are formed of a hardware operating circuit, and the centroid position calculation means calculates the centroid position based on outputs of the hardware operating circuit.

Regarding claim 12, Blum et al. disclose that the centroid position calculating step includes a step of calculating a difference between the bright spot center position and the centroid position and a step of calculating the centroid position from the difference.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. (WO 95/34800) in view of Suzuki et al. (JP 200-283853).

Regarding claims 3 and 4, Blum et al. discloses the claimed invention as above. However, Blum is silent that the center position calculation means calculates the bright spot center positions based only on data of luminances exceeding a predetermined reference value in the luminance data, and the centroid position calculation means calculates the centroid positions based only on data of luminances exceeding the reference value in the luminance data.

Suzuki et al. shows in Figs. 1-2 that the center position calculation means calculates the bright spot center positions based only on data of luminances exceeding a predetermined reference value in the luminance data, and the centroid position calculation means calculates the centroid positions based only on data of luminances exceeding the reference value in the luminance data.

It would have been obvious to one of ordinary skill in the art to provide a center position calculation means of Suzuki et al. on the device of Blum et al. for the purpose of accurately obtaining coordinates of a light spot.

5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blum et al. (WO 95/34800) in view of Yamatani (JP 08-262650)..

Regarding claims 5-7, Blum et al. discloses the claimed invention as above. However, Blum does not disclose a smoothing means that converts luminance data

Art Unit: 2878

corresponding to each of the light receiving elements into a weighted average of the same and luminance data corresponding to adjacent light receiving elements.

Yamatani discloses a smoothing means that converts luminance data corresponding to each of the light receiving elements into a weighted average of the same and luminance data corresponding to adjacent light receiving elements.

It would have been obvious to one of ordinary skill in the art to provide a smoothing means of Yamatani on the device of Blum et al. for the purpose of providing stability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEUNG C. SOHN whose telephone number is (571)272-4123. The examiner can normally be reached on Mon-Thur, 7:30 AM -6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GEORGIA Y. EPPS can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SEUNG C SOHN/
Patent Examiner, Art Unit 2878